

- 20 -

CLAIMS:

1. A system for checking the position and/or the dimensions of mechanical pieces, including
- 5 • a checking probe (4) with
- detecting devices (13),
 - power supply devices (12),
 - a logic unit (36),
 - memory devices (37,38) adapted for storing the value

10 of at least one operation parameter of the checking probe (4), and

 - a remote transceiver unit (8) for the wireless transmission and reception of signals, and
- 15 • a base transceiver unit (10) for the wireless transmission and reception of signals to and from said remote transceiver unit (8),
- characterized in that the logic unit (36) of the checking probe (4) is adapted for selecting the value of said at least one operation parameter between two or more
- 20 selectable values, in response to the controls (C1,C2) received by means of the remote transceiver unit (8), the logic unit (36) being adapted to provide, in response to the received controls (C1,C2), signals indicative of said at least one parameter and of a current selectable
- 25 value,
- the system including
- a display device (22) adapted for displaying, on the basis of said indicative signals, information regarding said at least one parameter and said associated current

30 selectable value, and

 - a manually-operated control device (11), connected to the base transceiver unit (10) and adapted for generating, upon an operator's manual control on the basis of information in the display device (22), control

35 signals corresponding to said controls (C1,C2), and for transmitting said control signals by means of the base transceiver unit (10).

- 21 -

2. The system according to claim 1, wherein said display device (22) is connected to the base transceiver unit (10), said indicative signals being wirelessly transmitted from the remote unit (8) to the base transceiver unit (10).

3. The system according to claim 2, wherein the manually-operated control device (11) includes said display device (22).

4. The system according to one of the preceding claims, including an interface unit (11), connected to said base transceiver unit (10), that includes said manually-operated control device (11).

5. The system according to claim 4, wherein said remote unit (8) and said base transceiver unit (10) define a single wireless two-way communication link (14).

6. The system according to claim 5, wherein the remote transceiver unit (8) is adapted for transmitting by means of said single wireless two-way communication link (14) detection signals generated in the probe (4) by the detecting devices (13).

7. The system according to claim 5 or claim 6, wherein the base transceiver unit (10) is adapted for transmitting by means of said single wireless two-way communication link (14) signals for activating the probe (4) on the basis of signals generated in the interface unit (11).

8. The system according to one of the preceding claims, wherein said remote unit (8) and said base transceiver unit (10) are of the radio-frequency type.

9. The system according to claim 8, wherein each of said base unit (10) and said remote transceiver unit (8)

- 22 -

includes an antenna (30).

10. The system according to claim 8 or claim 9, wherein
said at least one operation parameter of the checking probe
5 (4) is the transmission frequency of the remote transceiver
unit (8).

11. The system according to one of the preceding claims,
wherein said memory devices include a temporary register
10 (37) and a non-volatile memory (38).

12. The system according to one of the preceding claims,
wherein said manually-operated control device (11) includes
at least a key (20,21) and is adapted for generating said
15 control signals in response to manual activation of said at
least one key by the operator.

13. The system according to one of the preceding claims,
wherein said manually-operated control device (11) includes
20 two keys (20,21) and is adapted for generating said control
signals in response to manual activation of said two keys
(20,21) by the operator.

14. The system according to one of the preceding claims,
25 for the checking of mechanical pieces in a machine tool
(2), wherein the checking probe is a contact detecting
probe (4) and the detecting devices include a microswitch
(13).

30 15. A method for selecting the value of at least an
operation parameter in a system for checking the position
and/or the dimensions of mechanical pieces including a
checking probe (4) with a logic unit (36), memory devices
(37,38), and a remote transceiver unit (8) for the wireless
35 transmission and reception of signals, a base transceiver
unit (10) for the wireless transmission and reception of
signals to and from said remote transceiver unit (8), a

- 23 -

display device (22), and a manually-operated control device (11) connected to said base transceiver unit (10), the method including the following steps

- 5 - generation in the logic unit (36), and transmission (46) to the display device (22) of signals indicative of said at least one operation parameter and of an associated current selectable value,
- 10 - display (48) in the display device (22), on the basis of said indicative signals, of information regarding said at least one parameter and associated current selectable value, and
- 15 - generation (52,56), in the manually-operated control device (11) in response to a control manually provided by an operator on the basis of information displayed on the display device (22), of control signals corresponding to the updating control (C1) or the confirmation control (C2) of the current selectable value, and the transmission of said control signals from the base unit (10) to the remote transceiver unit (8).
- 20

16. The method according to claim 15, in a system in which said display device (22) is connected to the base transceiver unit (10), wherein said transmission (46) of the indicative signals occurs wirelessly, from the remote unit (8) to the base transceiver unit (10).

17. The method according to claim 15 or claim 16, for selecting the value of two or more operation parameters of a system in which said memory devices (37,38) include a temporary register (37), the method including the storing in said temporary register (37) of the current selectable value of each of said two or more operation parameters, as a consequence of the generation (56), in the manually-operated control device (11), of control signals corresponding to the confirmation controls (C2).

- 24 -

18. The method according to claim 17, in a system in which said memory devices (37,38) further include a non volatile memory (38), the method including the following further steps

- 5 - generation (72), in the manually-operated control device (11) in response to a control manually provided by an operator, of control signals corresponding to confirmation controls (C2) of the selections made, and transmission of said control signals from the base unit
10 (10) to the remote transceiver unit (8), and
- storage (76) in the non-volatile memory (38) of the values selected and stored in said temporary register (37).

- 15 19. The method according to claim 18, in a system in which said remote unit (8) and said base transceiver unit (10) are of the radio-frequency type, where one of said two or more operation parameters of the system is the transmission and reception frequency of the remote transceiver unit (8).
20